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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/622,464 | 07/21/2003 | Chikaomi Mori | 030804 | 4537 |
| 23850 | 7590 | 05/06/2004 | EXAMINER | |
| ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006 | | | HOLLINGTON, JERMELE M | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2829 | |

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

10/622,464

Applicant(s)

MORI, CHIKAOMI

Examiner

Jermele M. Hollington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6 is/are rejected.
- 7) ☒ Claim(s) 4,5 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, a heat-conductive sheet between a substrate body and a first reinforcing plate [claim 4], a heat-conductive sheet between a substrate body and a first reinforcing plate, between a spacer and the first reinforcing plate and between the spacer and a support member [claim 5] and a heat-conductive sheet between a first reinforcing plate and a second reinforcing plate [claim 7] must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show a heat-conductive sheet as described in the specification [see page 10, lines 17-22, page 11, lines 12-17, page 12, lines 12-18, page 13, lines 9-10 and 17-18. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: hole 610 [see page 13, line 2]. A proposed drawing correction or corrected drawings are required in reply to the

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Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: item 605 [see Fig. 3]. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5. Figure 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to **a single paragraph** on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

7. The abstract of the disclosure is objected to because a) it is not in a single paragraph form as stated above and b) in line 12, it states "adjustingaparallelismofthecontactorunit 300" there should be a space in between each word. Correction is required. See MPEP § 608.01(b).

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8. The disclosure is objected to because of the following informalities: a) on page 10, line 17, the phrase “ A heat-conductive sheet is ” should be change to either --A plurality of heat-conductive sheets is-- or --Heat-conductive sheets are-- since the remaining of the paragraph discloses that there are more than one sheet being used in the structure and b) on page 13, lines 9-10 and 17-18, the phrase “reinforcing plate 620” should be change to --reinforcing plate 600-- since item number 620 has been designated as a screw [see page 13, line 2 and Fig. 3].

Appropriate correction is required.

9. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

10. Claim 5 is objected to because of the following informalities: in lines 1-2, the limitation “ a heat-conductive sheet is ” should be change to either --a plurality of heat-conductive sheets is-- or --heat-conductive sheets are-- since the remaining of the claim discloses that there are more than one sheet is being claimed. Appropriate correction is required.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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12. Claims 1-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art of Fig. 4.

Regarding claim 1, the prior art of Fig. 4 discloses a probe card used for performing an electrical test of a subject to be tested that is a semiconductor device or the like [see page 1, lines 6-8] and comprising a substrate body (100), a contactor unit (300) provided at one side of the substrate body (100) for establishing an electrical contact with the subject to be tested [see page 1, lines 9-11] as well as for establishing an electrical contact with the substrate body (100) via an interposer (200) [see page 1, lines 12-14], supporting means (leaf spring 450) for supporting one side [lower surface] of the contactor unit (300) [see page 1, lines 16-17] with elastic force and a parallelism adjusting means (500) that comes in contact with the other side [upper surface] of the contactor unit (300) in a vertical direction for adjusting a parallelism of the contactor unit (300) [see page 1, lines 17-20], wherein the supporting means (450) is configured to include a support member (leaf spring holder 460) arranged at one side [lower surface] of the substrate body (100) [see page 2, lines 23-24] and the support means (450) interposed toward a vertical direction between a flange section (not numbered but shown) provided at an inside section of the support member (460) and a flange section (not numbered but shown as a small block) at outside section of the contactor unit (300). However, the admitted prior art does not disclose a coil spring. It is well known to make the leaf spring equivalent to the coil spring as claimed [see MPEP 2144.06 *In re Ruff*, 256 F.2d 590, 118 USPQ 340 (CCPA 1958)]. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to make the leaf spring of the admitted prior art of Fig. 4 to be equivalent to the coil spring since the leaf spring moves in a upward and downward direction [see col. 3, lines 15-17], which is consider as a vertical

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direction, and as shown located between the support member (leaf spring holder 460) and contactor unit (300), the leaf spring performs the same functionality equivalence of that of the coil spring.

Regarding claim 2, the admitted prior art discloses a first reinforcing plate (650) that comes in contact with the substrate body (100) is arranged at the other side [top surface] of the substrate body (100).

Regarding claim 3, the admitted prior art discloses the support member (460) is attached to the first reinforcing plate (650) via a spacer [not shown in Fig] inserted into a bore hole formed on the substrate body (100).

Regarding claim 6, the admitted prior art discloses a screw (parallelism adjusting screw 520) serving as the parallelism adjusting means (500) is threadedly secure to the first reinforcing plate (650) so as to cause its leading edge to be in contact with the contactor unit (300) via a hole formed on the substrate body (100) [see page 1, line 22- page 2, line 3], while a second reinforcing plate (640) is attached to the first reinforcing plate (650) and the screw (520) is threadedly secured to the second reinforcing plate (640) so as to cause its leading edge to be in contact with a position of the substrate body (100) above the contactor unit (300) via the hole.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tsuura (6340604), Mathieu et al (6509751), Maruyama et al (6563330 and 6661247) and Eslamy et al (6640415) disclose a method and apparatus for a contactor and semiconductor device.

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14. Claims 4-5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

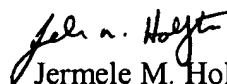
15. The following is a statement of reasons for the indication of allowable subject matter: regarding claims 4, 5 and 7, the instant claims are deemed to be directed to a nonobvious improvement over the admitted prior art of Fig. 4. The improvement comprises heat-conductive sheet provided between different components to absorb a temperature difference of each component to avoid a warp of the substrate body during testing with high temperature.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermele M. Hollington whose telephone number is (571) 272-1960. The examiner can normally be reached on M-F (9:00-4:30 EST) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (517) 272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH
April 26, 2004


Jermele M. Hollington
Examiner
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